

*Amendments to the Claims*

The listing of claims will replace all prior versions, and listings of claims in the application.

1-40 (canceled).

41. (new): A method for identifying a protein, comprising:

- (a) contacting a matrix comprising the protein with a sensitizing reagent comprising one or more optionally substituted heteroaromatic compounds;
- (b) contacting the matrix with one or more reduceable metal salts to stain the protein;
- (c) detecting the stained protein;
- (d) destaining the stained protein to produce a destained protein; and
- (e) carrying out a mass spectrometric analysis on the destained protein, or a fragment thereof.

42. (new): The method of claim 41, wherein said matrix is a polyacrylamide gel, agarose, paper, cellulose acetate, or nitrocellulose.

43. (new): The method of claim 41, wherein said protein is fixed to the matrix before (a) by treatment of the matrix with a fixing reagent comprising an aqueous solution of an organic acid and a lower alcohol containing 1-4 carbon atoms.

44. (new): The method of claim 43, wherein said lower alcohol is methanol, ethanol, propanol, or isopropanol.

45. (new): The method of claim 41, wherein said substituted heteroaromatic compound is substituted with a group which imparts water solubility.

46. (new): The method of claim 41, wherein said optionally substituted heteroaromatic compound is primuline, thioflavin S or 2-(4-aminophenyl)-6-methyl-7-sulfobenzothiazole.

47. (new): The method of claim 41, further comprising contacting said matrix with said sensitizing reagent together with one or more contrast enhancing agents and one or more buffers.

48. (new): The method of claim 47, wherein said contrast enhancing agents are selected from the group consisting of sodium sulfide, thiourea, dithiothreitol, potassium tetrathionate, sodium dithionite, and the sodium or potassium salt of thiosulfate.

49. (new): The method of claim 47, wherein said one or more buffers has a pKa of 5-10.

50. (new): The method of claim 47, wherein said one or more buffers is aqueous morpholinoethanesulfonic acid.

51. (new): The method of claim 41, wherein said one or more reduceable metal salts is silver nitrate.

52. (new): The method of claim 41, wherein said stained protein is developed prior to said detecting by contacting the matrix with one or more reducing agents.

53. (new): The method of claim 41, wherein the destaining is carried out by reoxidizing reduced silver metal grains to silver ions.

54. (new): The method of claim 53, wherein the destaining is further carried out by complexing silver ions to thiosulfate.

55. (new): The method of claim 54, wherein the destaining is carried out using potassium ferricyanide and sodium thiosulfate.

56. (new): The method of claim 41, wherein the protein is cleaved by a cleavage reaction before carrying out the mass spectrometric analysis on the destained protein.

57. (new): The method of claim 56, wherein the cleavage reaction is performed using a protease.

58. (new): The method of claim 41, wherein a section of the matrix comprising the protein is isolated away from the remainder of the matrix and the protein is isolated

away from the matrix, before carrying out the mass spectrometric analysis on the destained protein.

59. (new): A kit for the detection of biopolymers, comprising:

- (a) a sensitizing reagent comprising one or more optionally substituted heteroaromatic compounds;
- (b) one or more reduceable metal salts;
- (c) one or more developer solutions comprising a reducing agent;
- (d) one or more stopper solutions which prevent further reduction of the reduceable metal salts;
- (e) one or more contrast enhancing agents; and
- (f) two or more destaining agents.

60. (new): The kit of claim 59, wherein a destaining agent is potassium ferricyanide or sodium thiosulfate.

61. (new): The kit of claim 59, wherein a first destaining agent is potassium ferricyanide and a second destaining agent is sodium thiosulfate.

62. (new): The kit of claim 59, further comprising a fixing reagent comprising an aqueous solution of an organic acid and a lower alcohol containing 1-4 carbon atoms;

63. (new): The kit of claim 59, further comprising one or more cleaving reagents;

64. (new): The kit of claim 63, wherein the one or more cleaving reagents comprise a protease.

65. (new): The kit of claim 59, wherein the sensitizer further comprises one or more contrast enhancing agents and one or more buffers.

66. (new): The kit of claim 65, wherein said contrast enhancing agents are selected from the group consisting of sodium sulfide, thiourea, dithiothreitol, potassium tetrathionate, sodium dithionite, and the sodium or potassium salt of thiosulfate.

67. (new): The kit of claim 65, wherein said one or more buffers has a pKa of 5-10.

68. (new): The kit of claim 65, wherein said one or more buffers is aqueous morpholinoethanesulfonic acid.

69. (new): The kit of claim 59, wherein the sensitizing reagent comprises one or more of primuline, thioflavin S or 2-(4-aminophenyl)-6-methyl-7-sulfobenzothiazole.